

### Abstract of the Disclosure

5 An automated microfluidic system that includes a cartridge reservoir part, a cartridge, a compressed-air storage tank, a buffer storage tank, and a reader is provided. The automated microfluidic system that detects a particular protein in a biological sample by enzyme-linked immunosorbent assay (ELISA) can automate a series of assaying processes, beginning with sample injection and ending with detection, with a simple structure, thereby allowing for convenient and quick detection of a particular protein in a biological sample without requiring skillful, elaborate manipulations by an operator.